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EXAMINER

GUERRERO, MARIA F

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/991,337

Applicant(s)

BHOWMIK ET AL.

Examiner

Maria Guerrero

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 12-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 12-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is in response to the Amendment filed June 29, 2005.

#### **Status of Claims**

2. Claims 5-11 and 21-28 are canceled. Claims 1-4 and 12-22 are pending.

#### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities: claim 1 recites:  
"surface surface" on line 3. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 12 and 15-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoon et al. (E.P. 0413903A1).
5. Yoon et al. teaches forming two electrodes (26) on a substrate (10) in a plane that is substantially parallel to a plane of the substrate, depositing a dielectric between the two electrodes, creating an electric field between the two electrodes, and forming a waveguide between the two electrodes in the presence of the electric field (Fig. 1-2, page, 3, lines 50-58, page 4, lines 1-35, page 5, lines 15-55). Yoon et al. shows defining the two electrodes by a lithography process in a substrate (page 8, lines 1-15). Yoon et al. teaches the waveguide comprising an organic crystal material having an organic

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molecule with a donor portion, an acceptor portion coupled to the donor portion via a conjugates backbone (page 6-7). Yoon et al. shows depositing a cladding over the waveguide (Fig. 3, page 8, lines 35-43). Yoon et al. inherently discloses growing a crystal by controlling the evaporation of the solvent (page, lines 35-55). Yoon et al. teaches introducing an optical signal and applying a voltage to the two electrodes (page 8, lines 50-56, page 9, lines 1-10). Yoon et al. shows controlling the cooling (page 9, lines 5-8).

6. Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Komatsu (U.S. 5,334,551).

7. Komatsu teaches forming two electrodes on a substrate in a plane that is substantially parallel to a plane of the substrate, creating an electric field between the two electrodes, depositing a dielectric between the two electrodes, and forming a waveguide between the two electrodes in the presence of the electric field (Abstract, col. 3, line 67, col. 4, lines 1-8).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (U.S. 5,334,551) in view of Jain et al. (U.S. 6,221,565).

Regarding claims 13-14, Komatsu does not specifically show polishing the waveguide as claimed. However, Jain et al. shows the step of polishing the waveguide (col. 12, lines 30-40).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Komatsu reference by including the step of polishing the waveguide as taught by Jain et al. in order to improve the planarity of the structure.

### ***Response to Arguments***

9. Applicant's arguments filed December 21, 2004 have been fully considered but they are not persuasive. Claims 1-4 and 12-22 stand rejected. The amendment does not overcome the rejections because there is not specific plane claimed.

Applicant argued that Yoon et al. and Komatsu do not disclose forming two electrodes on a substrate in a plane that is substantially parallel to a plane of the

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substrate. However, the expression substantially parallel to a top surface plane of the substrate has been interpreted according to its plain meaning. Therefore, a person of ordinary skill in the art would recognize that Yoon et al. teaches forming two electrodes (26) on a substrate (10) in a plane that is substantially parallel to a plane of the substrate (see Fig. 1-3). Komatsu teaches forming two electrodes on a substrate in a plane that is substantially parallel to a plane of the substrate (Abstract, Fig. 2(i)). In addition, the elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Furthermore, during patent examination, the pending claims must be "given \*their< broadest reasonable interpretation consistent with the specification." > In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. > In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)(The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.) < This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) >; Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1372, 69 USPQ2d

1857 (Fed. Cir. 2004). Therefore, the words: “substantially parallel to a top surface plane of the substrate” have been given their plain meaning because applicant failed to provide a clear definition in the specification.

### ***Conclusion***

10. The recitation a method of changing a phase of an optical signal in an electro-optic modulator... has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hung et al. (US 6,532,315) (of record), Nakaya (US 5,483,609) (of record), and Auracher (US 3,990,777)(of record) are cited as evidence to show that a person of ordinary skill in the art, in a broad interpretation, would recognize that the step of forming the waveguide in a plane that is substantially parallel to a top surface plane of the substrate is disclosed by Yoon et al. and Komatsu.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 19, 2005

*Maria Guerrero*  
**MARIA F. GUERRERO**  
**PRIMARY EXAMINER**